Methods: From November 2007 to December 2011, 384 patients underwent TAVI in our center [233 Edwards and 151 CoreValve]. 74 were treated with post dilatation for residual AR following valve implantation. In this study, 68 were analyzed after excluding 6 patients due to unavailable data.
Results: Mean age was 79±6.2 yrs. Male gender was 42 (61.7%). Mean logistic Euroscore and STS score were 25.2±17.3 and 9.1±9.1, respectively. Mean grades of aortic regurgitation at baseline, before and after post dilatation were 1.3±1.1, 2.3±0.7 and 0.8±0.6, respectively. CT scan analysis showed annular coronal diameter 26±2mm, sagittal diameter 22±3mm, mid-sinusal diameter 36±4mm, sinus-tubular junction 27±5mm, annular eccentricity index 0.9±0.1. Mean number of calcified commisures 1.9± 1.1, mean number of annular calcium spots 2.3±1.2. Edwards valve was used in 13 (19.1%), while CoreValve in 55 (80.8%). Mean valve size was 27.1±2.2 mm. Mean balloon size was 25.6±2.3mm. Postdilatation was effective in reducing AR by 1 grade in 42 patients (79%). Effective post dilatation was achieved in 100% of patients with a "post dilatation balloon diameter/ coronal diameter ratio" 0.85-1.07. Outcome of post dilatation was not influenced by the annular eccentricity index. AR following postdilatation was more in patients with heavily calcified annulus. 1 patient (1.5%) had annular tear following post dilatation. 30 days echocardiographic follow up showed 1.1±0.9 AR.
Conclusions: Effectiveness of post dilatation is multifactorial and depends mainly on the proper choice of the balloon size, which in terms depends on the annular coronal diameter assessed by CT scan. Since commisural calcification and annular eccentricity index don't influence the outcome of post dilatation, there is no need for aggressive postdilatation to reduce AR after valve implantation.

TCT-848

Clinical Impact Of Paravalvular Leaks On Biomarkers And Survival After Transcatheter Aortic Valve Implantation.

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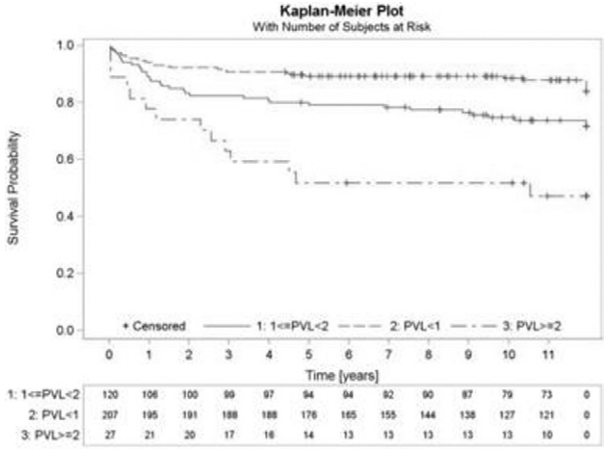
Background: There is accumulating evidence that up to 20 % of the implanted devices after TAVI are associated with a significant degree of paravalvular leaks (PVL), but the clinical impact of PVL is still insufficiently explored.
Methods: A total of 355 patients with severe aortic valvulare stenosis (AVS) were treated by TAVI (Corevalve n = 222, Edwards Sapien n = 133). Survival, NT-pro-BNP and the grade of PVL were quantified up to 12 months after implantation.
Results: Technical success rate was 97 %. Thirty-day mortality was 9.6%. Post-procedural transvalvular aortic regurgitation was seen only in a minority of cases (5%), whereas PVL were frequently observed (grade: <1+ in 58.2%, ≥1+ − <2+ in 33.9%, and ≥2+ in 7.9%). There was a clear relation-ship between PVL and adverse outcome (p <0.001). After a transient increase NT-pro-BNP showed a significant decline. Interestingly, a PVL ≥2+ was associated with a much higher rise in NT-pro-BNP compared to the other groups (p <0.01), and a post-procedural increase in NT-pro-BNP by more than 1640ng/L was associated with a significant increase in rate of death (p <0.01).



Conclusions: TAVI is an efficient treatment option for high-risk patients with severe AVS. The incidence of PVL is an inacceptable clinical problem and still insufficiently recognized. Serial measurement of NT-pro-BNP can be used for risk-stratification in patients with a significant PVL. In general, PVL graded ≥2+ is associated with a dramatically increased 6-month mortality. Therefore, any action to fight against paraprosthetical regurgitation is highly recommended.

TCT-849

Predictive reliability of logistic EuroSCORE II in patients undergoing transcatheter aortic valve implantation: assessment and comparison to classic systems of preoperative risk stratification

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Background: The logistic European System for Cardiac Operative Risk Evaluation (logEuroSCORE II) has been introduced to improve prediction of acute mortality in cardiac surgery. No specific tools exist for evaluation of patients undergoing transcatheter aortic valve implantation (TAVI). We assessed predictive ability of the logEuroSCORE II for perioperative mortality after TAVI and compared it to four other systems of preoperative risk evaluation.
Methods: 300 consecutive patients (age80.7±7.2years,59.5%female) undergoing TAVI using Edwards Sapien (XT) devices were entered into a prospective dedicated database. Preoperative risk stratification was performed using logEuroSCOREs I and II, Society of Thoracic Surgeons (STS), Ambler and Parsonnet Scores. Validity of scores was assessed by receiver-operator curves (ROC) and resulting area under the curve (AUC).
Results: Observed 30-day mortality in our sample was 10.7%(32/300). Calculated scores were: logEuroSCORE I mean22.8%,CI0.21-0.246, logEuroSCORE II mean 7.3%, CI0.064-0.081, STS mean 8.6%, CI0.077-0.095, Ambler mean 6.3%, CI0.057-0.070, Parsonnet mean 22.5%, CI0.209-0.241. ROC analyses revealed none of the tested systems to possess adequate predictive value for acute mortality following TAVI: logEuroSCORE I AUC0.57, CI0.45-0.69, logEuroSCORE II AUC0.58, CI0.47-0.70, STS AUC0.59, CI0.47-0.71, Ambler AUC0.53, CI0.41-0.65, Parsonnet AUC0.51, CI0.38-0.64. To estimate accuracy (sum of correct positive and negative predictions), Youden-indices (maximum of sensitivity and specificity) were calculated and used to determine thresholds for classification of scores as false/true. Derived accuracy was low, ranging between 34.0%(Ambler) and 55.2%(logEuroSCORE II).
Conclusions: None of the tested risk stratification systems including the new logEuroSCORE II provided adequate prediction of acute mortality in our large routine TAVI cohort. Likely, scoring systems derived from classic cardiac surgery databases are inadequate for risk prediction in TAVI patients. Therefore, specific risk models are needed for high-risk patients undergoing TAVI. Until these are available, evalutation of perioperative risk has to rely on interdisciplinary clinical judgment of individual patient factors.

TCT-850

Early Clinical Outcome of Transcatheter Valve-In Valve Implantation in The Nordic Countries

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Background: Transcatheter valve-in-valve implantation (VinV-TAVI) has emerged as a potential option in addition to reoperative surgical aortic valve replacement to treat failed biological heart valve substitutes, however with limited experience. Herein we report the comprehensive experience of VinV-TAVI in the Nordic countries from May 2008 to January 2012.
Methods: A total of 49 VinV-TAVIs (45 aortic, 2 mitral and 2 tricuspid) were performed during this time period in 11 centers. For the aortic VinV:s, the mean age of patients was 80.6 (61-91) years (M 26;F 19) and mean Euroscore, Euroscore II and STS scores were 35.4, 16.3 and 14.6, respectively. The type of failure was stenosis/combined in 58% (mean and peak aortic valve gradients 77 and 45 mmHg) and regurgitation 42% of cases. The Sapien/XT® (Edwards Lifesciencies, Irvine, CA) and CoreValve® (Medtronic Inc, Minneapolis, MN) system was used in 33 and 12 cases, respectively. The access routes were transaipical in 25, transfemoral in 17, transaortic in 2 and subclavian in one case. The mean follow-up was 10.6 months. The periprocedural and postoperative outcome was assessed according to the VARC criteria.
Results: There was no intraoperative mortality. The technical success rate was 95.6% (one 2nd valve implantation, one conversion to open surgery). All-cause 30-day mortality was 4.4% (one cardiac-related, one aspiration pneumonia). Major complications within 30 days were sroke in 2.2%, periprocedural MI in 4.4% and major vascular complication in 2.2% of patients. At 1 month all but one patient had either no or mild paravalvular leaks with mean and peak valve gradients of 17(4-38) and 30(7-68) mmHg, respectively. The mean gradient was > 20 mmHg in 17% of patients; that remained unchanged at 12 months. The 1-year survival was 85.2%.